

Amendments to the Claims

The Claim Listing below is provided for convenience. No amendments are being made herein.

Claim Listing

1. (Previously Presented) A system for providing differentiated classes of storage, comprising:
 - a storage device having a plurality of storage locations and a logical block name space for organizing logical block names of the storage locations,
 - a performance process configured to determine a level of performance for the plurality of storage locations and partition the plurality of storage locations into a plurality of regions as determined by their different levels of performance,
 - a mapping process configured to map the partitioned regions of the storage locations and aggregate the logical block names of the storage locations of the storage device in the partitioned regions having an identical level of performance to a selected section of the logical block name space,
 - a RAID controller, for assigning a first RAID level configuration to a first set of aggregated logical block names of the storage device, and assigning a second RAID level configuration to a second set of aggregated logical block names of the storage device, the first and second RAID level configurations being different from each other; and
 - the system thereby providing differentiated classes of storage having two or more differentiated RAID level configurations of the same storage device to one or more clients accessing the system.
2. (Previously Presented) A system according to claim 1, wherein:
 - the performance process separates the plurality of storage locations into a plurality of categories as determined by their different levels of performance.

- 3.-7. (Canceled)
8. (Previously Presented) A system according to claim 1, further comprising:
a process configured to employ the storage system to provide a file system service.
9. (Previously Presented) A system according to claim 1, further comprising:
a process configured to provide a storage volume service.
10. (Previously Presented) A system according to claim 9, wherein the mapping process creates multiple storage volumes at a selected level of performance on the storage device.
11. (Previously Presented) A performance process for providing differentiated classes of storage based on determined levels of performance of a plurality of storage locations of a storage device, the process comprising the steps of:
providing a storage device having a plurality of storage locations and a logical block name space for organizing logical block names of the storage locations,
determining a level of performance of the plurality of storage locations,
partitioning the plurality of storage locations into a plurality of regions as determined by their different levels of performance,
mapping partitioned regions of the storage locations,
aggregating the logical block names of the storage locations in the partitioned regions having an identical level of performance to a selected section of the logical block name space,
assigning a first RAID level configuration to a first set of aggregated logical block names,
assigning a second RAID level configuration to a second set of aggregated logical block names, the first RAID level configuration and second RAID level configuration being different from one another, and

the storage device thereby providing differentiated classes of RAID level storage to one or more clients.

12. (Previously Presented) A process according to claim 11, further including the step of separating the plurality of storage locations into a plurality of categories as determined by their different levels of performance.

13.-17. (Canceled)

18. (Original) A process according to claim 11, wherein mapping creates multiple storage volumes at a selected level of performance.

19. (Previously Presented) A system for providing differentiated classes of storage, comprising

a storage device having a plurality of storage locations, a logical block name space for organizing logical block names of the storage locations, and performance parameters of the storage locations that vary across the storage device;

a partitioning process configured to partition the storage locations into regions and aggregate the logical block names of the storage locations in the partitioned regions having an identical level of performance to a selected section of the logical block name space, thereby providing two or more differentiated classes of storage on the storage device to one or more clients accessing the system;

a RAID controller, for assigning different RAID level techniques to respective ones of the two or more differentiated classes of storage; and

a performance measurement system that scans storage locations of the storage device and determines the level of performance of the storage locations.

20. (Previously Presented) A system according to claim 19, wherein the partitioning process selects a fixed set of partitions as a function of a selected configuration of system components.

21. (Canceled)
22. (Previously Presented) The system of claim 1, wherein a level of performance includes a data access time, or a reliability of a storage location, or a combination thereof.
23. (Previously Presented) The system of claim 1, wherein the storage device is a single storage disk.
24. (Previously Presented) The system of claim 1, wherein the mapping process performs mapping and aggregating when the storage system is designed.
25. (Previously Presented) The system of claim 1, wherein the mapping process performs mapping and aggregating during operation of the storage device.
26. (Previously Presented) The system of claim 1, further comprising a performance measurement system configured to scan storage locations of the storage device and determine the level of performance for the storage locations.
27. (Previously Presented) The system of claim 26, wherein the performance measurement system performs experimental read and write operations and determines the level of performance from experimental data collected in the read and write operations.
28. (Previously Presented) The process of claim 11, wherein a level of performance includes a data access time, or a reliability of a storage location, or a combination thereof.
29. (Previously Presented) The process of claim 11, wherein partitioning comprises performing experimental read and write operations and determining the level of performance from experimental data collected in the read and write operations.

30. (Previously Presented) The process of claim 11, wherein mapping and aggregating are performed when a storage system that implements the process is designed.
31. (Previously Presented) The process of claim 11, wherein mapping and aggregating are performed during operation of a storage system that implements the process.